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struck terror and dismay, has been brought to shame and disgrace, and obliged to sue for mercy. It has also been the immediate cause of one of the most long, obstinate, and sanguinary wars which ever desolated the fair face of creation; its flames have visited every quarter of the world, and after twenty years continuance, is but in a manner commencing.

MARCELLUS.

For the Belfast Monthly Magazine.

REMARKS ON ARITHMETIC ; AND ON A BOOK LATELY PUBLISHED, ENTITLED, " THE PHILOSOPHY OF ARITHMETIC ; (CONSIDERED AS A BRANCH OF MATHEMATICAL SCIENCE) ; AND THE ELEMENTS OF ALGEBRA ; DESIGNED FOR THE USE OF SCHOOLS, AND IN AID OF PRIVATE INSTRUCTION, BY JOHN WALKER, FORMERLY FELLOW OF DUBLIN COLLEGE.

FROM the manner in which arithmetic is taught among us, it would seem, as if it was supposed to be a kind of process, in which the pupil is instructed to arrange his numbers, (magic numbers, as it were,) by rule of blind-man's-buff, with the expectation that, after a few flourishes of the pen, a certain thing, called the answer, is to appear.

Whether the low state of this science has been occasioned by the imperfect manner in which it has been taught, or by the contemptuous opinion generally entertained of it, and originating in ignorance of its value, is a question not important to determine. It is enough, that it has been looked down on, and a skill in it almost deemed unworthy of a scholar. Among our schools it has experienced unmerited neglect. Mercantile schools, it is true, pay some

attention to it ; but in the generality of classical schools the inattention is extreme, and, we may add, *systematic*. While the instructor bends all his powers to the cultivation of the learned languages, the arithmetical department is left to the management of some ignorant, half-taught creature, without ability, and without authority. The natural and necessary consequences ensue ; young men are sent from school to college, or elsewhere, with the character of finished scholars, when they are utterly unable to resolve a simple problem in the Rule of Three.

The importance of arithmetic is so obvious, as to require no proof. In fact, the improvement of it has ever kept pace with the improvement of society ; and from the place it holds among any people, we may form a tolerably just estimate of the degree of civilization among them. To individuals, too, the same test may be applied ; for we may confidently say, that where arithmetic has been neglected, the education, however brilliant in other respects, is, as a whole, lamentably imperfect.

Men in general entertain a very erroneous opinion concerning arithmetic. They readily grant its importance and necessity to the merchant, but do not deem it essential to themselves. That its necessity is not of such frequent recurrence to the latter, will be admitted ; but it is an actual absurdity to infer thence, that it may be neglected. Progress in the sciences must be for ever barred to the student, who does not lay his ground-work here ; and who is the man so simple, as to conceive, that men of fortune shall never need the aid of calculation ? Whether he borrow money or lend, whether he buy an estate, or sell, it cannot be reasonably expected, that he can do so with assurance to himself, unless he be acquainted with this science.

Supposing, moreover, that he needs not its aid in such cases, still, as the head of a family, and dispenser of its stores, he comes with advantage to his economic duties, if well instructed in arithmetic. And his advantage will consist, not merely in the facility with which he may ascertain the value of what he buys or sells, but in the habit, impressed thereby, of attention to his concerns.

To mercantile men it will be needless to recommend attention to this science: it is their peculiar instrument. But we would suggest to them, that the mode of learning it may be of high importance. It differs much, whether a man learns it mechanically, storing up rules in the mind, which are easily forgotten, because they are numerous, and unaccompanied with the reason of the process: or, on the other hand, through "a few comprehensive principles, by which the knowledge of it may be communicated with unspeakably greater facility and expedition; and, when once attained, will not be liable, (as at present) to be soon forgotten."

To all, who wish to acquire this useful science in an advantageous way, I strongly recommend *Walker's Philosophy of Arithmetic*; convinced, on an inspection of it, that it will be found to exceed the modest promise of the preface.

It may be necessary to caution unexperienced readers against being alarmed at the title of the work. It implies no more, than a rational treatise on arithmetic, with a clear investigation of the principles on which it is founded. To rescue this science from the contempt brought on it by ignorant empiricism, was a valuable thought, and this work, the result thereof, in execution equals the design.

The first useful novelty that oc-

curs, is the adaptation of algebraic rotation: this is done in every stage, according as each part will admit of the rotation. This practice, introduced thus gradually, has the great advantage of accustoming the pupil to comprehensive brevity in the expression of his sums, and removes the difficulty, so frequently alarming to beginners, of learning all those marks in a mass.

The introductory part of the vulgar arithmetic (by which is meant, all that is previous to the doctrine of proportions,) contains a number of useful observations, together with the rationale of each process, expressed in language at once concise and clear. But it is in the doctrine of proportions, and the consequences deduced from it, that the excellence particularly appears. The doctrine is fundamentally laid down, by that mean removing the difficulty, so puzzling to beginners, of distinguishing between direct and inverse proportion; fellowship, interest, discount, exchange, &c. arranged in their proper degree of connexion, with the doctrine of proportion, and the absurdity of forming them into separate rules, clearly pointed out. The merchant ought particularly to peruse articles 135, 137, 138, 139.

The part, in short, which is appropriated to vulgar arithmetic, is highly deserving of approbation, as a model for future compositions, on the same subject, if such should be deemed necessary after this.

But the excellence of this part rests not in itself. The learner is led through each successive step, by the clearest reasoning; and then, when he has passed the last barrier of this space, he enters on the spacious plain of Algebra with every advantage. This may be considered to be a *peculiar* excellence of this work, that

the one part is so wisely framed as a congenial introduction to the other.

In the algebraic part the same lucidness of arrangement, the same concise clearness of expression, are to be found: and they appear here with the greater advantage, as the subject is in reality more difficult. In short, the same patient reasoner is found to continue his attendance on his pupil, even to the end.

As algebra is known to few, and is considered as an abstruse science, beyond the reach of ordinary capacities, exhortation to learn it may not be very much attended to; but we are well convinced, that a little acquaintance with it, as presented by Mr. Walker, will remove all apprehension; and we are the more anxious that the trial should be made, because we consider the difficulties are, in a great measure, removed by him, and the utility of the science is great.

To every person, unacquainted with algebra, no matter what his education may have been in other respects, we would urge the study of it; and more particularly so, if he have learned vulgar arithmetic in the ordinary way, that is, *by rule*, or rather *by rote*, without having considered it as a science. To all, and more especially to the latter, algebra affords a noble exercise of the mental powers; and I hesitate not to say, that the man, whose mind is exercised and strengthened thus, will not be found an unpractised athlete in the struggles he is to encounter in the world.

I would have extracted a few passages from Mr. Walker's book, but that your limits would scarcely allow it, and that it may be better to refer your readers to the book itself, where they will find enough to justify this panegyrical description. After this laudatory strain, so uncommon from

reviewing chair, in which I have placed myself, which I deem no more than due to so meritorious a work, I must point out what appears a defect, namely, that, while it is admirably calculated for the private student, from the fewness of examples, it cannot be considered as well calculated for schools. A sufficient number of examples might be added in form of an appendix: it is hoped that when the work reaches a second edition, Mr. Walker will take this well meant hint, and make the desired addition, or alteration.

OBA.

For the *Belfast Monthly Magazine.*

THIRTEENTH REPORT FROM THE COMMISSIONERS OF THE BOARD OF EDUCATION, IN IRELAND.

Act 46, Geo. III.

(Ordered by the *House of Commons* to be printed, 1st May, 1812.)

To his Grace Charles, Duke of Lenox and Richmond, &c. &c. Lord Lieutenant General, and General Governor of Ireland.

(Continued from No. 52, Page 352.)

Cardiffstown.

AN endowment of 20*l.* yearly, by Lord Mayo: this endowment, as is stated to us, has not yet been carried into effect.

Portarlington.

The Earl of Galway, in the reign of King William, endowed this school with an acre of land, and a rent charge of 32*l.* per annum for ever, of which sum 20*l.* is for an English master, and 12*l.* for a French master. In the year 1788, this school was kept as a grammar-school; at present no school is taught, there is no school-house, and the tenant of the estate, said to